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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/559,347 | 04/27/00 | CHEN | Q 146712000400 |

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IM52/0409

EXAMINER

BERNATZ, K

ART UNIT

PAPER NUMBER

1773

DATE MAILED:

04/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/559,347

Applicant(s)

CHEN ET AL.

Examiner

Kevin M Bernatz

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 – 20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 - 20 of Chen et al. (U.S. Patent No. 6,120,890) in view of Ross et al. (U.S. Patent No. 6,143,375).

Regarding claims 1 and 10, Chen et al. (890) disclose a longitudinal or perpendicular magnetic recording medium comprising a substrate comprising Li, a sealing layer and a magnetic layer; wherein the sealing layer substantially prevents migration of Li from the substrate (claim 1). Chen et al. (890) further disclose all the additional limitations in applicant's dependent claims 2 – 9 and 11 – 20.

Chen et al. (890) fail to disclose using NiNb as the sealing layer, though Chen et al. (890) does disclose that Nb can be added to the NiP (col. 8, lines 29 – 30).

However, Ross et al. teach that it is preferable to use NiNb for NiP as an underlayer on glass or ceramic substrates because it provides for a wider range of laser

bump shapes for texturing of the underlayer (col. 3, lines 29 – 60 and col. 7, lines 25 – 35). Ross et al. further teach that the NiP or NiNb layer both provide protection from migration of impurities to the magnetic layer (col. 3, lines 12 – 18).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Chen et al. (890) to include a NiNb sealing layer as taught by Ross et al. in order to provide a wider range of laser bump shapes for texturing of the underlayer.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the location of the sealing layer and magnetic layer relative to each other and the substrate.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. (U.S. Patent No. 6,187,441 B1) in view of Ross et al. (375).

Regarding claims 1, 10 and 20, Takeuchi et al. disclose a longitudinal or perpendicular magnetic recording medium comprising a substrate comprising Li and a magnetic layer (col. 2, lines 28 – 33; col. 7, lines 36 – 62). Takeuchi et al. further disclose that these layers can be formed by sputtering (col. 17, line 29).

Takeuchi et al. fail to disclose a NiNb sealing layer.

However, Ross et al. teach that adding a NiNb layer onto a glass or ceramic substrate prevents impurities from reaching the magnetic layer and leads to a wide range of laser shapes that can be provided for texturing of the underlayer (col. 3, lines 12 – 60 and col. 7, lines 25 – 35).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Takeuchi et al. to include a NiNb sealing layer as taught by Ross et al. in order to prevent impurities from reaching the magnetic layer and to allow a wider range of laser shapes for texturing of the underlayer.

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Regarding claims 2 and 11, Takeuchi et al. disclose an underlayer between the sealing layer and the magnetic layer, a protective overcoat on the magnetic layer (col. 17, lines 20 – 45) and Li_2O content within applicants' claimed range (e.g. example 1 = 5.9 weight percent Li_2O).

Regarding claims 3 and 12, it is old in the art to oxidize NiP seedlayers in order to induce (200) crystallographic orientation for improved coercivity and S/N (applicants' admissions, page 5, first paragraph). Since Ross et al. teach both NiP and NiNb as suitable sealing layers, it would have been obvious to one of ordinary skill in the art to oxidize the NiNb layer for the reasons cited above.

Regarding claims 4 and 13, Ross et al. teach using amorphous NiNb (col. 7, line 30).

Regarding claims 5 – 7, 14 – 16 and 18, Ross et al. teach Cr adhesion layers (col. 2, lines 40 – 44) and sealing layers of encompassing thickness and composition (col. 7, lines 25 – 35).

Regarding claims 8 and 17, Ross et al. teach encompassing elements that can be added to Ni based sealing layers. It would have been obvious to one of ordinary skill to optimize the elements selected and the weight percent added depending on the desired end use.

Regarding claims 9 and 19, Takeuchi et al. disclose a Cr-V underlayer and CoCrPtTa magnetic layers (col. 17, lines 20 – 33 and col. 8, lines 39 – 45).

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7. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Ross et al. as applied to claims 1 and 10 above, and further in view of Okumura et al. (U.S. Patent No. 5,480,733).

Takeuchi et al. in view of Ross et al. disclose the claimed invention as described above with regard to base claims 1 and 10.

While Ross et al. teach encompassing elements are suitable for binary Ni-based alloys, neither Ross et al. nor Takeuchi et al. disclose adding said elements to NiNb.

However, Okumura et al. teach adding encompassing elements to NiP alloys in order to improve the flatness, coercivity and ease of manufacture (col. 2, lines 1 – 28 and col. 4, lines 7 – 20).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Takeuchi et al. in view of Ross et al. to add the disclosed elements to the NiNb layer as taught by Okumura et al. in order to improve the flatness, coercivity and ease of manufacture.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ross et al. (U.S. Patent No. 6,103,404) disclose the advantage of NiNb layers over NiP layers (col. 2, lines 30 – 40) and also discloses using a glass/Cr/NiNb/underlayer/magnetic layer/protective layer structure (col. 3, lines 37 – 49 and col. 4, lines 51 – 58).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB
March 29, 2001


STEVAN A. RESAN
PRIMARY EXAMINER